

REMARKS

Claims 1-54 are pending in the above-identified application, and were rejected. With this Amendment, claims 1 and 30 were amended and claims 2, 23-24, 31, and 52-54 were cancelled. Accordingly, claims 1, 3-22, 25-30, and 32-51 are at issue in the above-identified application.

I. 35 U.S.C. § 102 Anticipation Rejection of Claims

Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 19, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 47, 48, 51 and 53 were rejected under 35 U.S.C. § 102(b) as being unpatentable by Nafeh (U.S. Patent No. 5,343,251). Applicants respectfully traverse this rejection.

Claim 1 is directed to a signal processing apparatus, which includes candidate detecting means, characteristic-extracting means, and detecting means. The candidate detecting means receives an input signal including at least the first signal part and remaining signal parts in a time-divided fashion. The candidate detecting means also detects, from the input signal, a candidate part of the first signal part in accordance with characteristic patterns of the input signal at prescribed time intervals. The characteristic-evaluating means extracts characteristic data indicating the probability of the first signal part from the candidate part detected by the candidate detecting means or from the signal parts preceding and following the candidate part. The detecting means detects the first signal part in accordance with the characteristic data extracted by the characteristic-extracting means. The detecting means includes characteristic-evaluating means for evaluating the possibility that the candidate part is the first signal part on the basis of the characteristic data, and determining means for determining the first signal part from the result of evaluation performed by the characteristic-evaluating means. The characteristic-evaluating

means evaluates the possibility that the candidate part is the first signal part on the basis of the characteristic data derived from multiplying weighting values to the characteristic data and adding the weighted characteristic data. The characteristic-evaluating means uses a multi-layer preceptron to determine the possibility that the candidate part of the first signal part.

Nafeh is directed to a method and apparatus for classifying patterns of television programs and commercial using an artificial neural network or discerning device 10. (See Abstract and Col. 2 lines 39-40). In Nafeh, broadcast audio and/or video signals are received decomposed into their segments by audio and video decoders. (See col. 2, lines 55-60). Pre-processor 22 extracts the essential elements of the components, and feeds the extraction to the classifier module for signal discerning and pattern classification. (See col. 2, lines 60-65). A state buffer 25, a means for storing past decisions, is coupled to the output of neural classifier of classifier. (See col. 5, lines 52-54). The network consists of multiple layers of synaptic weights and of several hundred thousand inputs feeding hidden neurons, feeding to one output. (See col. 6, lines 13-18). The artificial neural network is trained using backpropagation algorithm with a set of inputs associated with a set of desired output; and the weights are iteratively adapted to achieve the desired mapping. (See col. 6, lines 6-10). The single output of the network is used to make a decision as to whether the broadcast is either a commercial or a program, following a detected transition. (See col. 6, lines 18-21). The output neuron level indicates the posterior probability of the broadcast being a program given the input minus the posterior probability of the broadcast being a commercial given the input. (See col. 6, 21-24). Thus, in Nafeh, all of the extracted features are provided to the network to determine whether the broadcast is a commercial or a program. Further, in Nafeh, the determination of whether the broadcast is a

commercial or a program is based on a comparison to previous determinations as made by the neural network based on analysis of all of the extracted features. Nafeh, does not detect a candidate part prior to extracting characteristic data indicating the probability of the first signal part from the candidate part. Thus, Nafeh does not disclose or suggest characteristic-extracting means for extracting characteristic data indicating the probability of the first signal part from the candidate part detected by the candidate detecting means or from signal parts preceding or following the candidate part, as required by claim 1. Accordingly, claim 1 and claims 3-15, 18-19, 22, and 25-29, which depend from claim 1, are allowable over Nafeh.

For reasons similar to those disclosed above with regard to claim 1, Applicants respectfully submit that the independent claim 30 and claims 32-44, 47-48 and 51, which depend from claim 30, are also allowable over Nafeh. Claims 2, 24, 31, and 53-54 were cancelled. Accordingly, Applicants respectfully request withdrawal of this rejection.

II. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 16, 20, 21, 23, 45, 49, 50 and 52 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nafeh (U.S. Patent No. 5,343,251) in view of Shah-Nazaroff et al (U.S. Patent No. 6,671,880). Applicants respectfully traverse this rejection.

As discussed above, Nafeh does not disclose or suggest characteristic-extracting means for extracting characteristic data indicating the probability of the first signal part from the candidate part detected by the candidate-detecting means or from signal parts preceding and following the candidate part. Thus, it would not have been obvious to one skilled in the art at the time the invention to modify the apparatus/method for classifying patterns of television programs and commercials, as disclosed by Nafeh, with the teachings of Shah-Nazaroff et al. to derive

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claims 16, 20, and 21, which depend from claim 1, or to derive claims 45, 49, and 50, which depend from claim 30. Claims 23 and 52 have been cancelled. Accordingly, Applicants respectfully request withdrawal of this rejection.

Claims 17 and 46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nafeh (U.S. Patent No. 5,343,251) in view of Kawara et al (U.S. Patent No. 6,278,836). Applicants respectfully traverse this rejection.

As discussed above, Nafeh does not disclose or suggest characteristic-extracting means for extracting characteristic data indicating the probability of the first signal part from the candidate part detected by the candidate-detecting means or from signal parts preceding and following the candidate part. Thus, it would not have been obvious to one skilled in the art at the time the invention to modify the apparatus/method for classifying patterns of television programs and commercials, as disclosed by Nafeh, with the teachings of Kawara et al. to derive claim 17, which depends from claim 1, or to derive claim 46, which depends from claim 30. Accordingly, Applicants respectfully request withdrawal of this rejection.

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III. Conclusion

In view of the above amendments and remarks, Applicants submit that all claims are clearly allowable over the cited prior art, and respectfully request early and favorable notification to that effect.

Respectfully submitted,

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